AMSAT News Service Weekly Bulletins
Issue: ANS-045
Date: 2021-02-14
Sources: amsat-ans-2021-ans-045-weekly-hyperkitty-dc12d5b6fc.txt

---

AMSAT NEWS SERVICE
ANS-045

The AMSAT News Service bulletins are a free, weekly news and information service of AMSAT, The Radio Amateur Satellite Corporation. ANS publishes news related to Amateur Radio in Space including reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

The news feed on http://www.amsat.org publishes news of Amateur Radio in Space as soon as our volunteers can post it.

Please send any amateur satellite news or reports to: ans-editor(a)amsat.org

You can sign up for free e-mail delivery of the AMSAT News Service Bulletins via the ANS List; to join this list see: https://mailman.amsat.org/postorius/lists/ans.amsat.org/

In this edition:

* What Is Keeping The NA1SS Amateur Station Off The Air?
* AMSAT OSCAR-109 Update
* Virtual HamCation Is this Weekend - Don't miss AMSAT!
* AMSAT 2021 President’s Club Welcomes New Members
* Happy New Year on Mars!
* Satellite Operating Awards Available
* AMICALSAT Award Certificates Deadline Approaching
* Changes to AMSAT-NA TLE Distribution for February 12, 2021
* NASA Awards Contract to Launch Initial Elements for Lunar Outpost
* ARISS News
* Upcoming Satellite Operations
* Hamfests, Conventions, Maker Faires, and Other Events
* Satellite Shorts From All Over

ANS-045 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 045.01
To: All RADIO AMATEURS
From: Radio Amateur Satellite Corporation
712 H Street NE Suite 1653
Washington, DC 20002

DATE 2021 Feb 14

What Is Keeping The NA1SS Amateur Station Off The Air?

Amateur Radio on the International Space Station (ARISS) and its partners are troubleshooting what is keeping the NA1SS amateur station off the air.

ARISS became aware of the problem after an attempted contact with a school in Wyoming, between ON4ISS on Earth and astronaut Mike Hopkins, KF5LJG at NA1SS, had to abort when no downlink signal was heard. ARISS has determined that the problem is not with the radio equipment on board the ISS Columbus module.

ARISS-International Chair Frank Bauer, KA3HDO, explained that during a 27 January spacewalk to install exterior cabling on the ISS Columbus module, the coax feed line installed 11 years ago was replaced with another built by the European Space Agency (ESA) and Airbus. It included two additional RF connectors to support the Bartolomeo payload-hosting platform installed last spring on Columbus.

"On 26 January, prior to the EVA [extravehicular activity], our Columbus next-generation radio system was shut off and the ISS-internal coaxial cable to the antenna was disconnected from the ARISS radio as a safety precaution for the EVA," Bauer said. “During the spacewalk, an external four-connector coax feed line replaced one with two RF connections. This change was made to allow ESA to connect ARISS and three additional customers to Bartolomeo, as compared to ARISS and one additional RF customer," Bauer explained.

With the spacewalk completed, the ISS crew restarted the ISS amateur radio station on 28 January, but no voice repeater or automatic packet repeater system (APRS) downlink reports were heard and no downlink signal was heard during an attempted scheduled school contact either. Bauer said that because the exterior cable is not an ARISS cable, ARISS is working with ESA and NASA on a way forward. "NASA has opened a Payload Anomaly Report on this issue. We have talked to both the NASA and ESA representatives," Bauer said.

[ANS thanks Southgate Amateur Radio New for this excellent summary of previously reported information]

+=+=+=

* 10:00 AM (EST) AMSAT CubeSat Simulator, Alan Johnston KU2Y, AMSAT VP of Educational Relations

* 12:00 AM (EST) AMSAT, Onward and Upward, Robert Bankston KE4AL, AMSAT President

* 1:00 PM (EST) AMSAT Engineering Update, Jerry Buxton N0JY, AMSAT VP of Engineering.

NOTE: > All times are Eastern Standard Time (UTC -05:00)

Be sure to check out the full schedule for other topics of interest.

https://www.hamcation.com/forums-speakers

[ANS thanks AMSAT President Robert Bankston, KE4AL, for the above information]

+=+=+=

Join the AMSAT 2021 President's Club today at
https://www.amsat.org/join-the-amsat-presidents-club/.

[ANS thanks Frank Karnauskas, N1UW, VP-Development for the above information.]

Happy New Year on Mars!

The countdown to a new year is in many ways a defining moment for our lives on Earth. Our age, our seasons, filing our taxes, all depend on the duration of Earth's orbit around the Sun. On Mars, there are no yearly tax returns, but as the planet also orbits around our Sun, time on Mars is similarly measured in years. However, there are some significant differences between a year on Mars and a year on Earth. February 7, 2021 marked what scientists here on Earth consider the start of Year 36 on Mars. Let's look at some similarities and differences between a year on the two planets:

* One year on Mars equals 687 Earth days. It takes almost twice as long as our Earth to orbit the Sun. This means your age would be a lot less if you lived on Mars! If you would like to feel younger, just divide your current age by 1.88 and casually mention to your friends that that's your real age...on Mars.

* A Martian day is defined, like on Earth, as the time it takes for the planet to make one revolution around its axis. This is called a sol. A sol is only slightly longer than an Earth day: 24 hours and 39 minutes.

* Mars has four seasons: winter, spring, summer and autumn. They are defined by the planet's position along its orbit around the Sun. The Martian New Year begins with the northward equinox (northern spring, southern autumn). As Mars travels through its yearly trajectory, the planet's axial tilt causes the northern hemisphere to receive more sunlight during the northern summer, and the southern hemisphere to receive more sunlight in northern winter – just like on Earth. Unlike Earth's seasons however, the seasons on Mars are not of equal lengths. This is because the orbit of Mars around the Sun is more elliptical than that of Earth. For example, the northern hemisphere spring (southern hemisphere autumn) lasts the longest, 194 sols, and the northern hemisphere autumn (southern hemisphere spring) is the shortest season at 142 sols.

* Mars' elliptical orbit can have important consequences. During southern spring and summer, Mars swings by the sun closer and faster. The resulting increase in luminosity heats up the atmosphere, causing turbulence to lift up very fine particles from the Martian soil. For this reason, the second half of a Martian year is often marked by fierce dust storms that can sometimes become planet-wide.

* Like on Earth, winters are cold and summers are warm on Mars, but the planet's overall temperature is a lot cooler, it has a yearly average temperature of minus 60 degrees Celsius. The planet experiences different weather phenomena throughout the seasons. A weather phenomenon that reappears every year around the southern spring and summer is the Arsia Mons Elongated Cloud, a cloud of ice crystals that can reach up to 1800 kilometres in length. It repeats for at least 80 sols and then disappears again during the rest of the year.

* The Martian calendar began fairly recently compared to the one on Earth. The count started in Earth year 1955. This first Martian year coincided with a very large dust storm in its second half, aptly named 'the great dust storm of 1956.'

If you’re looking for a reason to celebrate, here’s to a Happy New Mars Year!

[ANS thanks the European Space Agency for the above information]

Satellite Operating Awards Available

Awards are a big part of amateur radio in all of its various manifestations, and the same is true for satellite operations. There are a number of awards that are available for all your hard work on the satellites. AMSAT sponsors a number of these awards, and others are available from other amateur organizations. You may not have even known about some of them, and may have enough QSL cards to qualify now!

AMSAT's Satellite Communicators’ Club award is given to any operator for having made their first satellite contact. To apply for this, and other AMSAT awards, you should go to the AMSAT.ORG online store and purchase the award. After completing your purchase, email the AMSAT Awards Manager, kk5do AT amsat DOT org that you have made the purchase and supplying the necessary proof of contacts.

The Oscar Satellite Communications Achievement Award is for working 20 contacts, on any satellite or combination of satellites, in 20 different states, DXCC countries or Canadian Call Areas. Those that have the RAC CANDADAWARD or ARRL WAS with satellite endorsements, may submit a copy of their certificate as proof of working the 13 Canadian Call Areas or 50 U.S. States. All QSOs must be completed from locations separated by no more than 50 miles or 80 kilometers.

The Oscar Sexagesimal Award is the same as the Oscar Satellite Communications Achievement Award but is given for 60 contacts. All the qualifications and costs are the same.

Next there is the Oscar Century Award. This is the same as the other two awards but is for 100 contacts. Qualifications and costs are the same. Please note that the previous 3 awards are aggregated. Once you have worked your 20, that applies towards your 60 so you only need 40 more contacts. The same is true for the 100, once you get your 60, you only need 40 more for your 100.

The AMSAT Rover Award is given to those intrepid souls who make our grid counts possible. It is based on a rather complex point system, which is detailed at https://www.amsat.org/amsat-rover-award/

Finally, AMSAT offers the Robert W. Barbee Jr., W4AMI Satellite Operator Achievement Award. It is awarded for the submission of 1,000 satellite contacts on OSCAR-6 or later satellites. There is an endorsement for each additional 1,000 and a special certificate at 5,000.

For details on each of the AMSAT awards and how to apply for them, see the AMSAT website at https://www.amsat.org/awards-2/

In addition, the American Radio Relay League (ARRL) offers many of their operating awards with satellite endorsements for those who complete the necessary contacts exclusively using satellites. These include the VHF/UHF Century Club (VUCC) for working 100 different grid squares, and the Worked All States (WAS) for confirmed contact stations in each of the 50 states. Those up for a particular challenge can shoot for the Worked All Continents (WAC) for contacting stations on each of the 8 continents, and DX Century Club (DXCC) for contacting 100 different DXCC countries on satellite.

For details on the ARRL awards, begin the search by consulting

http://www.arrl.org/awards/

Satellite operating success can earn some impressive wallpaper!

[ANS thanks Bruce Paige, KK5DO, AMSAT Awards Manager, for the above information]

+=+=+=

to the AMSAT-F database

The request for a diploma is done by sending an email to amsatf(a)amsat-f.org indicating your callsign or the name given in the AMSAT-F database to send the data.

Only the received frames actually registered on https://amsat.electrolab.fr/ will be taken into account.

[ANS thanks Christophe Mercier, AMSAT-F president, for the above information]

+=+=+=

Gateway, often on their way to the Moon, will work. It will provide command and control and serve as the docking hub for the outpost. HALO will support science investigations, distribute power, provide communications for visiting vehicles and lunar surface expeditions, and supplement the life support systems aboard Orion, NASA's spacecraft that will deliver Artemis astronauts to the Gateway.

About one-sixth the size of the International Space Station, the Gateway will function as a way station, located tens of thousands of miles at its farthest distance from the lunar surface, in a near-rectilinear halo orbit. It will serve as a rendezvous point for Artemis astronauts traveling to lunar orbit aboard Orion prior to transit to low-lunar orbit and the surface of the Moon. From this vantage, NASA and its international and commercial partners will conduct unprecedented deep space science and technology investigations.

NASA's Launch Services Program at Kennedy will manage the SpaceX launch service. The HALO is being designed and built by Northrop Grumman Space Systems of Dulles, Virginia, and the PPE is being built by Maxar Technologies of Westminster, Colorado. NASA's Johnson Space Center in Houston manages the Gateway program for the agency. NASA's Glenn Research Center in Cleveland is responsible for management of the PPE.

Learn more about NASA's Gateway program at: https://nasa.gov/gateway

Learn more about NASA's Artemis program at: https://www.nasa.gov/artemis

[ANS thanks NASA for the above information]

+=+=+=

The latest information on the operation mode can be found at
https://www.ariss.org/current-status-of-iss-stations.html

[ANS thanks Charlie Sufana, AJ9N, one of the ARISS operation team mentors for the above information]

Upcoming Satellite Operations

Quick Hits:

****Watch Twitter, there are lots pop-up roves happening lately, and I can’t keep this page updated with all of them.****

Spring Training Rove! KX9X will be heading down to Ft Myers, FL the week of March 7 for some sun and baseball. Will activate EL86 & 96 holiday style for sure, possibly a couple other grids as well. Linear/FM. Details soon.

N6UA: I’ve had enough of the arctic zephyr … I’m headed south. I don’t have exact details yet – but the plan is to rove to DM74 for passes on February 19th. I’ll be overnight, so plenty of opportunities. Probably headed down via the “7s” and home into the “8s”

AD0HJ will be in EN23 2/11 & 2/12.

KE0PBR: EL87 Holiday Style FM only Week of 2/14… Might want to reach out if you need it.

Major Roves:

CM93 Possibility: N6DNM Very long shot, but might want to put it on your calendar for May 15th, if you can figure out where it is and for #SOTA folks, that would be W6/SC-336, Santa Rosa Island, activated only once before.

Please submit any additions or corrections to Ke0pbr (at) gmail.com

[ANS thanks Paul Overn, KE0PBR, AMSAT rover page manager, for the above information]

Hamfests, Conventions, Maker Faires, and Other Events

AMSAT Ambassadors provide presentations, demonstrate communicating through amateur satellites, and host information tables at club meetings, hamfests, conventions, maker faires, and other events.

[ANS thanks Paul Overn, KE0PBR, AMSAT Events page manager, for the above information]

QSO Today Virtual Ham Expo; March 13,14 2021
The second QSO Today Virtual Ham Expo will be held on March 13-14, 2021. There is an Amateur Radio speaker track and AMSAT will have a virtual booth during the event. Advance tickets are now on sale. More information at:
https://www.qsotodayhamexpo.com/

[ANS thanks Virtual QSO Ham Expo for the above information.]

Satellite Shorts From All Over

+ NASA will provide live coverage on NASA Television, the agency’s website, and the NASA app of the launch and docking of a Russian cargo spacecraft to the International Space Station beginning at 11:15 p.m. EST Sunday, Feb. 14. The unpiloted Russian Progress 77 is scheduled to launch on a Soyuz rocket at 11:45 p.m. (10:45 a.m. Monday, Feb. 15, Baikonur time) from the Baikonur Cosmodrome in Kazakhstan. (ANS thanks NASA for the above information)

+ U.A.E’s Hope (Al Amal) orbiter arrived at Mars on Feb. 9, firing its thrusters for 27 minutes to successfully enter Martian orbit. The U.A.E. is the first Arab country, and the fifth overall, to reach the planet. Meanwhile, China's Tianwen-1 entered Martian orbit on Feb. 10 for a period of checkout before a planned release of its instrument-laden lander and rover sometime in May. And next week, on Thursday, Feb. 18, NASA's Perseverance rover will slam into Mars’ atmosphere at hypersonic velocities and eventually find itself sitting alone on the surface seven minutes later (hopefully all in one piece). The Mars fleet is arriving! (ANS thanks The Orbital Index for the above information)

+ After an incredible 43 years and 22 billion kilometers, Voyager 1 and 2 are still delivering science (which takes 21 hours to reach us at the speed of light). Using data from both craft, scientists have found evidence for electrons getting reflected off of shockwaves created by our Sun’s coronal mass ejections, which then spiral along interstellar magnetic field lines while accelerating to great speeds (scientific paper at https://iopscience.iop.org/article/10.3847/1538-3881/abc337). (ANS thanks The Orbital Index for the above information)

+ NASA announced Feb. 9 it wants to obtain a seat on the next Soyuz mission to the International Space Station, launching in just two months, to ensure a U.S. presence on the station in the event of any commercial crew delays. There are no known issues with SpaceX’s Crew Dragon spacecraft, one of which is currently docked to the station for the Crew-1 mission. “Experience has shown that new launch capabilities may encounter unanticipated delays or difficulties maintaining initial schedules,” NASA noted. (ANS thanks Space News for the above information)

+ If there's an advanced extraterrestrial civilization inhabiting a nearby star system, we might be able to detect it using its own atmospheric pollution, according to new NASA research. The study looked at the presence of nitrogen dioxide gas (NO2), which on Earth is produced by burning fossil fuels. In their study, the team used computer modeling to predict whether NO2 pollution would produce a signal that is practical to detect with current and planned telescopes. They found that for an Earth-like planet orbiting a Sun-like star, a civilization producing the same amount of NO2 as ours could be detected up to about 30 light-years away. Since NO2 is also produced naturally, scientists will have to carefully analyze an exoplanet to see if there is an excess that could be attributed to a technological society. (ANS thanks Space Daily for the above information)

+ U.S. astronauts living aboard the ISS orbital outpost, on Feb. 14, will break the record for most days in space by a crew launched aboard an American spacecraft, NASA said. "They will surpass the record of 84 days set by the Skylab 4 crew on Feb. 8, 1974", NASA said. Four flight engineers - Shannon Walker, KD5DXB, Soichi Noguchi, KD5TVP, Victor Glover, KI5BKC, Mike Hopkins, KF5LJG - docked the SpaceX Crew Dragon spacecraft to the US module last November. (ANS thanks Space Daily for the above information)

/EX

In addition to regular membership, AMSAT offers membership in the

President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Store.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact info [at] amsat.org for additional student membership information.

73 and Remember to help keep amateur radio in space,
This week's ANS Editor, Mark Johns, K0JM
k0jm at amsat dot org